

REMARKS

The disclosure was objected to because of informalities. The noted informality has been corrected as requested by the Examiner. The noted objection is therefore overcome.

Claims 46-52 were objected to because of informalities. The noted informality has been corrected, and as such, claims 46-52 are believed to be in condition to overcome the noted objection.

Claims 46, 47 and 53 stand rejected under 35 U.S.C. 102(b) as being anticipated by Nohara; Claims 49, 51 and 52 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Nohara in view of Chow.

Applicants appreciate the indication that Claims 48 and 50 would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Claims 48 has been amended and rewritten in independent form, as such, it is believed to be in condition for allowance. Claims 47 and 49 which recite further nonobvious features, have been amended to depend on claim 48 and are therefore also believed to be in condition for allowance. Claims 51 and 52 add further nonobvious features to claim 49 and are also believed to be in condition for allowance.

Claim 53 has been amended to recite the novel feature similar to that recited in claim 48 which is not taught or suggested by any of the cited references taken individually or in combination. Claim 53 as amended is believed to be in condition for allowance.

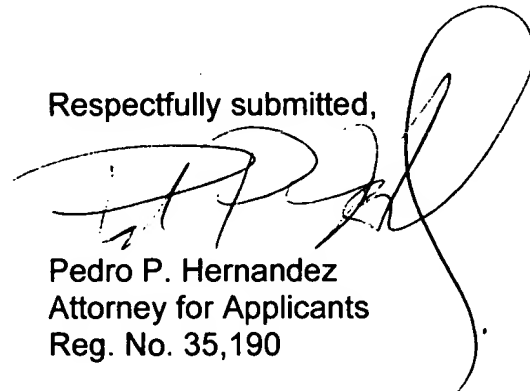
In light of the above, it is respectfully submitted that the present application which includes claims 47-49 and 51-53 is in condition for allowance, and notice to that effect is respectfully requested.

While it is believed that the instant response places the application in condition for allowance, should the Examiner have any further comments or suggestions, it is respectfully requested that the Examiner contact the undersigned in order to expeditiously resolve any outstanding issues.

Attached hereto is a marked-up version of the changes made to the specification and claims by the current amendment. The attached page is captioned **"Version with Markings to Show Changes Made."**

To the extent necessary, Applicants petition for an Extension of Time under 37 CFR 1.136. Please charge any fees in connection with the filing of this paper, including extension of time fees, to the deposit account of Texas Instruments Incorporated, Account No. 20-0668.

Respectfully submitted,

A handwritten signature in black ink, appearing to read 'Pedro P. Hernandez', is written over the typed name and title.

Pedro P. Hernandez
Attorney for Applicants
Reg. No. 35,190

Texas Instruments Incorporated
P.O. Box 655474, MS 3999
Dallas, TX 75265
(972) 917-5455

C

Version with Markings to Show Changes Made

In the Specification:

The paragraph beginning at page 1, line 4 has been amended as follows (Note that this paragraph had been previously amended via the preliminary amendment filed on November 30, 1999, those changes have been included in the paragraph below, including some errors that had been introduced via the changes made in the preliminary amendment):

This application is a Divisional of [pending U.S. Patent Application No.: 08/834,503, filed April 4, 1997] U.S. Patent No. 6, 014, 412. This application also claims the benefit of Provisional Application No. 60/016,251, filed April 19, 1996, and Provisional Patent Application No. 60/016,252, filed April 19, 1996, all of [of] which are hereby incorporated by reference. Further, this application is related to U.S. Application No. 08/835, 073 by Cioffi et al., filed April 4, 1997, entitled "Radio Frequency Noise Canceller", and U.S. Application No. 08/834,500 by Bingham et al., filed April 4, 1997, entitled "Mitigating Radio Frequency Interference in Discrete Multicarrier Transmissions Systems", both of which are hereby incorporated by reference.--

In the Claims:

Claims 46 and 50 have been cancelled. Claims 47-49 and 53 have been amended as follows:

46. Cancelled

47. (Amended) A receiver as recited in claim [46] 48, wherein said digital RF interference canceller mitigates the effect of RF interference on the digital frequency domain data by estimating a frequency of the RF interference, estimating the RF interference in accordance with the frequency domain model for the RF interference and the estimated frequency of the RF interference, and removing the estimated RF interference from the digital frequency domain data.

48. (Amended) A receiver for a multicarrier modulation system, comprising:
an analog-to-digital (A/D) converter, said A/D converter receives analog signals
that have been transmitted to said receiver over a transmission media and converts the
analog signals to digital time domain signals;
a multicarrier demodulator operatively connected to said A/D converter, said
multicarrier demodulator receives the digital time domain signals and converts the
digital time domain signals into digital frequency domain data;
a digital RF interference canceller operatively coupled to said multicarrier
demodulator, said digital RF interference canceller mitigates the effect of RF
interference on the digital frequency domain data by modeling the RF interference in
accordance with a frequency domain model; and [A receiver as recited in claim 46,
wherein] the digital frequency domain data is provided on a plurality of frequency tones
used by the multicarrier modulation system, and
wherein the frequency domain model is produced in accordance with the
following equation:

$$RFI_{n+m} = \left[\sum_{k=1}^{MO+1} \frac{A_k}{(m-\delta)^k} \right]$$

where RFI_{n+m} is the RF interference at a frequency tone $n+m$ due to a radio interferer at frequency $(n+\delta)$, δ is an offset amount, MO is a model order for the frequency domain model, and A_k is a complex number.

49. (Amended) A receiver as recited in claim [46] 48, wherein the digital time domain signals include a plurality of multicarrier modulation symbols carrying data, each of the symbols having a cyclic prefix,

wherein said receiver further comprises:

a cyclic prefix removal and windowing processor operatively connected between said A/D converter and said multicarrier demodulator, said processor performs a time domain windowing operation on the symbols, the time domain windowing includes, for each symbol, adding a portion of the cyclic prefix multiplied by a predetermined coefficient to a rear portion of the symbol.

C

50. Cancelled

53. (Amended) A method for mitigating radio frequency (RF) interference in a multicarrier modulation system, said method comprising the operations of:

(a) receiving analog signals that have been transmitted over a transmission media;

(b) converting the analog signals to digital time domain signals;

(c) converting the digital time domain signals into digital frequency domain data; and

(d) mitigating the effect of RF interference on the digital frequency domain data by modeling the RF interference in accordance with a frequency domain model, and the digital frequency domain data is provided on a plurality of frequency tones used by the multicarrier modulation system, and wherein the frequency domain model is produced in accordance with the following equation:

$$RFI_{n+m} = \left[\sum_{k=1}^{MO+1} \frac{A_k}{(m-\delta)^k} \right]$$

where RFI_{n+m} is the RF interference at a frequency tone $n+m$ due to a radio interferer at frequency $(n+\delta)$, δ is an offset amount, MO is a model order for the frequency domain model, and A_k is a complex number.